



Docket No.: 50432-234

**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of

Minh Van NGO

Serial No.: 10/079,517

Group Art Unit: 1742

Filed: February 22, 2002

Examiner: George P. Wyszomeirski

For: USING LT/NH3 OR H2 T REMOVE CUO FOR BETTER ADHESION OF CU  
AND SIN CAPPING

**DECLARATION UNDER 37 CFR §1.131**

Mail Stop  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

I, Min Van Ngo, hereby declare that:

1. I am the inventor of the invention disclosed and claimed in the above-referenced United States patent application.
2. I am aware of the prosecution history of this application which was filed in the U.S. Patent and Trademark Office on February 22, 2002. I am also aware that certain claims were rejected under 35 USC §102 for lack of novelty or under 35 USC §103 for obviousness predicated upon U.S. Patent No. 6,429,049 issued to Lee et al. on August 6, 2002 based upon an application filed in the United States Patent and Trademark Office on June 5, 2001.

Serial No.: 10/079,517

3. To my knowledge and in view of the factual evidence supplied herewith, the present invention was conceived in the United States prior to June 5, 2001, the filing date of the Lee et al. application. This fact is evidenced by the attached laboratory notebook entry and the invention disclosure submitted to Advanced Micro Devices, Inc. (AMD), the assignee herein (Exhibit A hereto). The redacted date was prior to June 5, 2001. Due diligence was exercised from prior to the June 5, 2001 filing date of the Lee et al. application to the filing date of the present application on February 22, 2002.

4. I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Dec. 9, 03

Date

Minh Van Ngo

Minh Van Ngo

TOPIC: Application Of LTA To Novel Devices

## AMD INVENTION DISCLOSURE

TLD ID#

G0296

Rec'd date

Sunnyvale x42110, return to MS68.

Texas x55964 return to MS562

Project: ☐, Product: ☐, Process: ☐, Technology ☐, to which the invention applies (identify):

List 2 to 5 key words useful to search by to find patents or art related to this invention:

Working title of invention:

Using LTA / NH<sub>3</sub> or H<sub>2</sub> to remove CuO  
for better adhesion of Cu & SiN copy

INVENTOR/SESSION PARTICIPANT ADDRESS INFORMATION IS ON THE NEXT PAGE (1A)

Inventor's signature: \_\_\_\_\_ date: \_\_\_\_\_  
 Inventor's printed full name: Minh Van Ngo Citizenship: \_\_\_\_\_  
 Employee #: \_\_\_\_\_ Extension: \_\_\_\_\_ Mail stop: \_\_\_\_\_ Home telephone: ( ) \_\_\_\_\_  
 Division: \_\_\_\_\_ Directorate: \_\_\_\_\_ Dept #: \_\_\_\_\_ Dept: \_\_\_\_\_ Manager: \_\_\_\_\_  
 Residence address: \_\_\_\_\_  
 Post Office address: \_\_\_\_\_

Co-Inventor's signature: \_\_\_\_\_ date: \_\_\_\_\_  
 Co-Inventor's printed full name: \_\_\_\_\_ Citizenship: \_\_\_\_\_  
 Employee #: \_\_\_\_\_ Extension: \_\_\_\_\_ Mail stop: \_\_\_\_\_ Home telephone: ( ) \_\_\_\_\_  
 Division: \_\_\_\_\_ Directorate: \_\_\_\_\_ Dept #: \_\_\_\_\_ Dept: \_\_\_\_\_ Manager: \_\_\_\_\_  
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 Post Office address: \_\_\_\_\_

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 Co-Inventor's printed full name: \_\_\_\_\_ Citizenship: \_\_\_\_\_  
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 Residence address: \_\_\_\_\_  
 Post Office address: \_\_\_\_\_

Co-Inventor's signature: \_\_\_\_\_ date: \_\_\_\_\_  
 Co-Inventor's printed full name: \_\_\_\_\_ Citizenship: \_\_\_\_\_  
 Employee #: \_\_\_\_\_ Extension: \_\_\_\_\_ Mail stop: \_\_\_\_\_ Home telephone: ( ) \_\_\_\_\_  
 Division: \_\_\_\_\_ Directorate: \_\_\_\_\_ Dept #: \_\_\_\_\_ Dept: \_\_\_\_\_ Manager: \_\_\_\_\_  
 Residence address: \_\_\_\_\_  
 Post Office address: \_\_\_\_\_

List on additional sheet if there are more co-inventors and list total number of inventors here: \_\_\_\_\_  
 Name(s) of attorney(s) preferred by inventor(s) to prepare patent application, if known: \_\_\_\_\_

LAW FIRM: MCDERMOTT, WILL & EMERY  
 ATTORNEY: Arthur J. Steiner

Witness 1 initial: \_\_\_\_\_ Witness 2 initial: \_\_\_\_\_

50432-234

G0296

G0296

**AMD INVENTION DISCLOSURE**

California 42110, return to MS68,

Texas 455964 return to MS562,

T.D. ID#

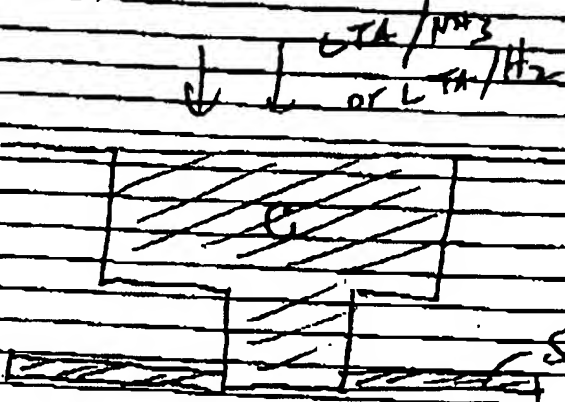
Rec'd date

Dresden 482401 Silke Kretzschmar at MS E21-PP.

State the problem solved by this invention:

To totally remove CuO.

Brief description and/or sketch of invention (please attach copies of AMD patent notebook pages, reports or drawings):



After <sup>Cu</sup> etched, there is Cu oxide on top of Cu surface. Need to remove this CuO for better adhesion between Cu / SiN capping interface.

Quickly LTA / (NH<sub>3</sub>) or LTA / H<sub>2</sub> cross to remove this CuO. Advantage also with short time is Cu will not oxidize before SiN capping deposition.

Patent notebook # \_\_\_\_\_ Page numbers \_\_\_\_\_

Witness 1 initial: \_\_\_\_\_

Witness 2 initial: \_\_\_\_\_

TOP-APPROPRIATE 7/31/95 printed 6/4/01 9:07 PM Page rev 6/20/00

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